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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/535,045	03/24/2000	Walter E. Donovan	NVIDP013	2742
28875	7590	08/25/2004	EXAMINER	
Zilka-Kotab, PC P.O. BOX 721120 SAN JOSE, CA 95172-1120			WALLACE, SCOTT A	
			ART UNIT	PAPER NUMBER
			2671	17
DATE MAILED: 08/25/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/535,045	DONOVAN ET AL.
	Examiner Scott Wallace	Art Unit 2671

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 24 May 2004.  
 2a) This action is **FINAL**.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 2-4,6,7,9,13-19,25,27,31-35 and 37 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 2-35 and 37 is/are allowed.  
 6) Claim(s) 13,14,31 and 32 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

***Response to Arguments***

1. Applicant's arguments with respect to claims 13-14 and 31-32 have been considered but are moot in view of the new ground(s) of rejection. Due to applicant's declaration and evidence, Malzbender and Christofferson are now used to overcome the reduce to practice date of 01/31/00.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 13 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et al in view of Malzbender, U.S. Patent No. 6,297,834.

4. As per claims 13 and 31, Wong et al discloses a method for calculating a level of detail (LOD) value for use during computer graphics processing (column 6 lines 53-67 and column 7 lines 1-3), comprising: identifying a plurality of geometrically arranged coordinates (column 6 lines 53-67); computing a distance value based on the geometrically arranged coordinates (column 6 lines 53-67); calculating a LOD value using the distance value for use during computer graphics processing; and estimating a derivative value based on the geometrically arranged coordinates (column 6 lines 53-67 and column 7 lines 1-3), wherein the distance value is computed based on the derivative value (column 6 lines 60-65). Wong et al does not disclose wherein the LOD value is calculated for dependent textures. This is disclosed in Malzbender in column 3 lines 16-27. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use dependent textures because having the LOD

change for the view would add more realism to the object that the appropriate LOD is applied (column 3 lines 16-27).

5. As per claim 31, Wong et al discloses a computer program embodied on a computer readable medium for calculating a level of detail (LOD) value for use during computer graphics processing (column 6 lines 53-67 and column 7 lines 1-3)), comprising: a code segment for identifying a plurality of textures coordinates (column 6 lines 53-67); a code segment for computing a distance value based on the texture coordinates (column 6 lines 53-67); and a code segment for calculating a LOD value using the distance value for use during computer graphics processing (column 6 lines 53-67 and column 7 lines 1-3). , Wong et al does not disclose wherein the LOD value is calculated for dependent textures. This is disclosed in Malzbender in column 3 lines 16-27. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use dependent textures because having the LOD change for the view would add more realism to the object that the appropriate LOD is applied (column 3 lines 16-27).

6. Claims 14 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malamy et al., in view of Christofferson et al., U.S. Patent No. 6,222,555.

7. As per claims 14 and 32, Malamy et al discloses a method for calculating a level of detail (LOD) value for use during computer graphics processing, comprising: identifying a plurality of geometrically arranged coordinates (column 2 lines 30-39); computing a distance value based on the geometrically arranged coordinates (column 2 lines 30-39); and calculating a LOD value using the distance value for use during computer graphics processing (column 2 lines 30-39). However, Malamy et al does not disclose wherein the LOD value is calculated for cube environment mapping. This is disclosed in Christofferson et al in column 3 lines 1-10. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use cube environment mapping with the system of Malamy et al because a simple cube is easier to create and store for low level of detail objects.

***Allowable Subject Matter***

8. Claims 2-3, 6-7, 9, 15-19, 25, 27, 33-35, 37 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: Prior art of reference fails to teach wherein the derivative value is calculated using the expression  $((Z1-Z0)+(Z3-Z2))/2$ . The prior art of reference fails to disclose performing a coordinate space transform if the geometrically arranged coordinates reside on separate sides of the cube map. The prior art of reference fails to disclose determining if a sign of a q-value of a pixel associated with each coordinate is the same. Also prior art of record fails to teach transforming the geometrically arranged coordinates to a different coordinate system  $(l,m,n)$ , wherein the distance value is estimated using an expression selected from the group of  $(l1-l0)\exp2 + (m1-m0)\exp2 + (n1-n0)\exp2$ ,  $(l2-l0)\exp2 + (m2-m0)\exp2 + (n2-n0)\exp2$ ,  $(l3-l0)\exp2 + (m3-m0)\exp2 + (n3-n0)\exp2$ , and  $(l3-l2)\exp2 + (m3-m2)\exp2 + (n3-n2)\exp2$ .

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Wallace whose telephone number is 703-605-5163. The examiner can normally be reached on Monday thru Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Zimmerman, can be reached on 703-305-9798. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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